Illinois Environmental Protection Agency
Bureau of Air, Permit Section
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Project Summary for a Construction Permit Application from the Village of Freeburg for Three Internal Combustion Engines in Freeburg, Illinois

Site Identification No.: 163060AAF
Application No.: 05060017
Date Received: June 28, 2005

Schedule
Public Comment Period Begins: September 29, 2005
Public Comment Period Closes: October 29, 2005

Illinois EPA Contacts
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I. INTRODUCTION

The Village of Freeburg has requested a construction permit to construct three internal combustion engines-generators at a new substation to be located at the intersection of Power Plant and Peabody Roads. These three engines will provide the Village with additional 5.5 MW electrical capacity.

II. PROJECT DESCRIPTION

This proposed project consists of installing three distillate fuel oil fired internal combustion engines with associated ancillary equipments at the Village's new substation site. The facility would serve as peaking station to generate electric power for the community and surrounding area when the normal sources of electrical power are not available, due to planned repair and maintenance, unexpected breakdowns, or high levels of electricity consumption. This proposed project replaces the previously permitted project of four diesel engines at the same location, which the Village has abandoned.

The new engines are each rated at 1825 KW nominal capacity. The engines will utilize low sulfur distillate fuel oil as their only fuel.

This new facility would be located about 2 miles north of the Village's existing power plant. This new facility is considered a single source with the Village's existing power plant located at 412 West High Street in Freeburg, which currently has eight engines.

III. EMISSIONS

The principal air contaminants emitted from the engines are nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM), sulfur dioxide (SO_2), and volatile organic material (VOM) which are the products of combustion of fuel in the engines. The potential for such emissions depends on the type of fuel consumed in the engines. These engines will burn distillate fuel oil.

The potential or permitted annual emissions of this project, as would be allowed by the draft permit, are summarized below. Actual emissions will be less than the permitted emissions to the extent that the facility would operate less than its allowable limits. The emissions are based on operation of each engine at maximum load for the total annual heat input limit of 29,150 mmBtu, which is equivalent to about 1625 engine operating hours, total.

Potential Project Emissions (ton/yr)

Pollutant	Project Potential
NOx	39.0
CO	3.2
SO_2	0.8
VOM	1.1
PM/PM_{10}	0.6
Individual HAP*	1.1

* Emissions of individual HAP, e.g., formaldehyde, benzene, etc.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

The engines are subject to the Board's rule that limits the opacity to 30%. The Village has requested authorization to exceed this limit during startups, malfunction, or breakdown of the engines in accordance with the requirements of 35 IAC 201.262. The Village has fulfilled applicable requirements to obtain this "authorization" in its permit. However, this authorization does not excuse the Permittee from the obligation to demonstrate that all reasonable efforts are made to minimize such excess emissions, including duration of individual startups and frequency of startups, rather it serves to trigger recordkeeping and reporting as needed to confirm proper operation of the engines.

V. APPLICABLE REGULATORY PROGRAMS

This project is not considered a major project under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, or the state rules for Major Stationary Source Construction And Modification (MSSCAM) 35 IAC Part 203. This is because the potential emissions from the proposed project, as limited by the permit, would be less than the significant major source thresholds for PSD. In particular, the NOx emissions are limited so that the NOX emissions are less than the significant emission level of 40 tons/year. Also, with respect to MSSCAM, VOM and NOx emissions are limited to less than the significant emission threshold of 40 tons/year.

The project is not subject to the requirements of Maximum Achievable Control technology (MACT) standards, 40 CFR 63, Subpart ZZZZ for Reciprocating Internal Combustion Engines because the source is not a major source of HAP emissions as limited by the permit.

The engines are exempt from the Acid Rain Program by meeting the new units exemption requirement of 40 CFR 72.7(a), which includes burning fuel with a sulfur

content less than 0.05 weight percent on an annual average. Thus, the engines are only subject to the Acid Rain Program provisions of 40 CFR 72.2 through 72.7 and 72.10 through 72.13.

VI. **PERMIT CONDITIONS**

The conditions of the draft permit for the project contain limitations and requirements for the proposed new engines to help assure that the facility complies with applicable regulatory requirements. The draft permit also identifies measures that must be used as good air pollution control practices to minimize emissions from the engines. Appropriate provisions are also included in the permit as needed to address the HAP emissions from the Village's eight existing engines.

The draft permit includes enforceable limits on emissions and operation for the engines to assure that facility remains below the levels at which it would be considered major for PSD or MSSCAM. In addition to limiting annual emissions, the permit also includes limits on hourly emissions, and limitations on the total annual heat input for the engines.

The permit also establishes appropriate compliance procedures for the facility, including requirements for emission testing, monitoring, recordkeeping, and reporting. These measures are being imposed to assure that the emissions of the engines are accurately tracked to confirm compliance with both the short-term and annual emission limits established for them.

VII. **REQUEST FOR COMMENTS**

It is the Illinois EPA's preliminary determination that the application for the project meets all applicable state and federal air pollution control requirements. The Illinois EPA is therefore proposing to issue this permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions of the draft permit.